

REMARKS

Applicant thanks the Examiner for the courteous phone interview extended to the undersigned on September 13, 2005. Applicant has now had an opportunity to carefully consider the Examiner's action in light of the interview, and respectfully submits that the subject application is now in condition for allowance based upon the amendments presented herein and the following remarks.

Pending Claims

The subject application was originally filed with 35 claims. Since then, Applicant has cancelled claims 1-34 without prejudice and added new claims 36-47.

In the present Amendment, Applicant has cancelled claims 36, 40, 43, 44, and 47 without prejudice to presentation of these claims, or the subject matter recited therein, in this or a later filed case. Applicant has also added new claims 48-51. Applicant represents that these new claims do not introduce new matter and consideration of these claims should not require an additional search.

Accordingly, claims 35, 37-39, 41-42, 45, 46, and 48-51 are now pending in the subject application.

Summary of Office Action

In the Office Action dated June 21, 2005, the Examiner:

- (1) objected to claims 36, 40 and 44 under 35 U.S.C. § 1.75(c) as being of improper dependent form or failing to further limit the subject matter of a previous claim;
- (2) rejected claims 35-47¹ under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement;

¹ Although the Office Action states that claims 35-46 are rejected under 35 U.S.C. § 112, first paragraph, it is believed that the Examiner meant to reject claims 35-47 since claim 47 depends from independent claim 42. Accordingly, Applicant will treat the rejection of claims 35-46 as if it included claim 47.

- (3) rejected claims 35-47² under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention;
- (4) rejected claims 35-41 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,300,878 issued to Ible (“the ‘878 patent”) in view of U.S. Patent No. 5,824,171 issued to Miyazono et al. (“the ‘171 patent”) and U.S. Patent No. 4,132,756 issued to Ferrentino et al. (“the ‘756 patent”);
- (5) rejected claims 42 and 46-47 under 35 U.S.C. § 103(a) as being unpatentable over the ‘878 patent in view of the ‘171 patent;
- (6) rejected claims 35-41 under 35 U.S.C. § 103(a) as being unpatentable over U. S. Patent No. 4,274,821 issued to Kierner (“the ‘821 patent”) in view of the ‘171 patent and the ‘756 patent;
- (7) rejected claims 42 and 46-47 under 35 U.S.C. § 103(a) as being unpatentable over the ‘821 patent in view of the ‘171 patent and the ‘756 patent;
- (8) rejected claims 43-45 under 35 U.S.C. § 103(a) as being unpatentable over the ‘878 patent and the ‘171 patent in view of the ‘756 patent; and
- (9) rejected claims 43-45 under 35 U.S.C. § 103(a) as being unpatentable over the ‘821 patent and the ‘171 patent in view of the ‘756 patent.

Objections to Claims 36, 40, and 44 under 35 U.S.C. § 1.175(c)

Applicant has cancelled claims 36, 40, and 44 without prejudice. Accordingly, the objections to these claims under 35 U.S.C. § 1.175(c) are now moot and Applicant respectfully requests that they be withdrawn.

² Although the Office Action states that claims 35-46 are rejected under 35 U.S.C. § 112, second paragraph, it is believed that the Examiner meant to reject claims 35-47 since claim 47 depends from independent claim 42. Accordingly, Applicant will treat the rejection of claims 35-46 as if it included claim 47.

Rejections of Claims 35-47 under 35 U.S.C. § 112, first and second paragraphs

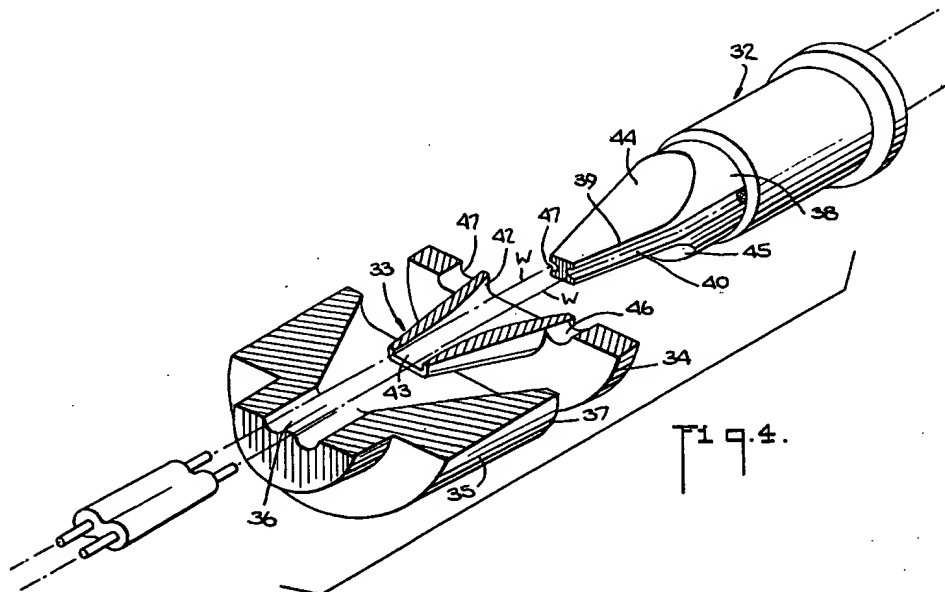
Regarding the Examiner's rejections of claims 35-47 under 35 U.S.C. § 112, first and second paragraphs, Applicant asserts that the limitation "configured to guide the reinforcement elements of one of the sets of reinforcement elements into the die throat and to define the position and spacing of the reinforcement elements of such set of reinforcement elements in the reinforcement ply material" is fully supported by the specification (see e.g., page 6, lines 9-11). Accordingly, the rejections to claims 35-47 under 35 U.S.C. § 112, first and second paragraphs, should be withdrawn.

Rejections of Claims 35-38 under 35 U.S.C. § 103(a)

Regarding the Examiner's rejections of claims 35-41 under 35 U.S.C. § 103(a), the Examiner is reminded that three basic criteria must be met to establish a *prima facie* case of obviousness. First, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Second, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Finally, there must be a reasonable expectation of success to modify the reference or to combine reference teachings.

Applicant respectfully asserts that neither the combination of the '878 patent, the '171 patent, and the '756 patent, nor the combination of the '821 patent, the '171 patent, and the '756 patent (collectively "the combined references") disclose or suggest each and every limitation recited in claim 35 as amended. The Examiner appears to admit that the '878 patent, the '821 patent, and the '171 patent fail to teach or suggest passages that have a rectangular cross-section. However, the Examiner contends that the '756 patent discloses a passage having a rectangular cross-section and, thus, it would have been obvious to combine the '878 patent and the '171 patent (or the '821 patent and the '171 patent) with the '756 patent to arrive at the claimed invention. For the reasons that follow, Applicant respectfully asserts that the '756 patent fails to disclose or suggest a passage having a substantially rectangular cross-section that, alone, guides the reinforcement elements of one of the sets of reinforcement elements into the die throat and defines the position and spacing of the reinforcement elements of such set of reinforcement elements in the reinforcement ply material as recited in independent claim 35 as amended.

The '756 patent discloses an extrusion head for making telecommunication cable in which optical fibers are uniformly spaced. As shown in **Fig. 4** of the '756 patent (shown below), the extrusion head includes a die 33 and a die-seating element 35. The die 33 includes a passage having an upstream conical portion 42 and a downstream duct portion 43. To assist in guiding wires **W** through the die 33, a mandrel 32 is provided within the passage of the die 33. The mandrel 32 includes a cylindrical portion 38, a frusto-conical portion 39, and two grooves 40 and 41 (incorrectly identified as 47 in **Fig. 4**) that extend along opposing sides of the cylindrical and frusto-conical portions 38, 39 of the mandrel 32. In the cylindrical portion 38 of the mandrel 32, the grooves 40, 41 are parallel. In the frusto-conical portion 39, the grooves 40, 41 are converging towards one another (hereinafter "converging grooves 40, 41").



The converging grooves 40, 41 produce components of force on the wires **W** that "compel them to travel closely adherent to the race of the grooves 40 and 41." Similarly, the inner surface of the passage in the die 33 produces components of force (opposite to those forces produced by the converging grooves 40, 41) to maintain the wires **W** in close adherence to the inner surface of the passage in the die 33. Consequently, the converging grooves 40, 41 in the mandrel 32 cooperate with the conical and duct portions 42, 43 of the passage in the die 33 to form a curved path that guides the wires **W** through the die 33. Due to the curved path followed by the wires **W** as they travel from the conical portion 42 to the duct portion 43 of the die 33, the

wires **W**, which are subjected to opposing components of force, are maintained at a pre-established distance as they exit the mandrel **32**.

Unlike the '756 patent, the passages **76** of the subject application lack a mandrel or any other structure disposed therein to assist in guiding the reinforcement elements **24** through such passages **76** and to define the position and spacing of the reinforcement elements **24** of such set **26** of reinforcement elements in the reinforcement ply material **20**. Instead, each passage, alone, guides the reinforcement elements **24** therethrough and defines the position and spacing of the reinforcement elements **24** in the reinforcement ply material **20**. To accomplish this, the diameter of each passage **76** is dimensioned to account for the number of reinforcement elements **24** designed to pass therethrough along with an appropriate cushion factor.

Moreover, one ordinarily skilled in the art would not be motivated to modify the '756 patent by eliminating the mandrel **32** from within the passage of the die **33** because the mandrel **32** is an integral component for guiding the wires **W** through the die **33** and establishing the distance between the wires **W** (see col. 7, lines 4-19). Without the mandrel **32**, the production of components of force on the wires **W** to assist in guiding them through the die **33** and to maintain them at a pre-established distance would be lost. Accordingly, one ordinarily skilled in the art would not be motivated to use the passage alone to assist in guiding the wires **W** through the die **33** and to define the spacing between the wires **W**.

For the foregoing reasons, the combined references, including the '756 patent, fail to disclose or suggest the use of a passage that, alone, guides the reinforcement elements through such passage and defines the position and spacing of the reinforcement elements in the reinforcement ply material. Accordingly, Applicant respectfully requests that the rejections to claims 35-38 under 35 U.S.C. § 103(a) be withdrawn.

Rejections of Claims 39-41 under 35 U.S.C. § 103(a)

Regarding the Examiner's rejections of claims 39-41 under 35 U.S.C. § 103(a), Applicant respectfully asserts that the combined references, alone or in combination, fail to disclose or suggest each and every limitation recited in independent claim 39 as amended. For example, the combined references, including the '756 patent, fail to disclose or suggest a passage that has "a uniform, substantially rectangular cross-section substantially along its entire length."

From a plain view of **Fig. 4** of the '756 patent, the passage in the die **33** lacks a uniform, substantially rectangular cross-section substantially along its entire length. Specifically, the die **33** includes a passage having a conical portion **42** and a duct portion **43**. By definition, the conical portion **42** has a cross-section that is not uniform since a conical shape inherently includes at least one tapered surface, which results in a non-uniform cross-section. Additionally, the conical portion **42** of the passage in the die **33** has a length that is more than half the overall length of the passage in the die **33** (see **Fig. 4** of the '756 patent). Therefore, the passage in the die **33** is not uniform in cross-section substantially along its entire length.

Moreover, one ordinarily skilled in the art would not be motivated to modify the '756 patent to include a passage with a uniform, substantially rectangular cross-section substantially along its entire length. The passage in the die **33** is dimensioned to accommodate the shape of the mandrel **32**. As discussed above, due to the curved path followed by the wires **W** as they travel from the conical portion **42** to the duct portion **43** of the die **33**, the wires **W**, which are subjected to opposing components of force, are maintained at a pre-established distance as they exit the mandrel **32**. To form a curved path between the inner surface of the passage in the die **33** and the frusto-conical portion **39** of the mandrel **32**, the passage in the die **33** includes a conical portion **42** of sufficient length to form such a curved path. If the passage in the die **33** were modified to include parallel walls substantially along its entire length, a curved path of sufficient length would not exist between such parallel walls of the die **33** and the frusto-conical portion **39** of the mandrel **32**. In other words, a significant portion of the passage in the die **33** needs to be conically-shaped to provide for such a curved path. Therefore, one ordinarily skilled in the art would not be motivated to modify the passage in the die **33** to include parallel walls substantially along its entire length because such a modification would not provide the necessary curved path required to maintain the wires **W** at a pre-established distance.

For these reasons, the combined references, including the '756 patent, fail to disclose or suggest a passage that has "a uniform, substantially rectangular cross-section substantially along its entire length" as recited in independent claim 39 as amended. Accordingly, Applicant respectfully requests that the rejections to claims 39-41 under 35 U.S.C. § 103(a) be withdrawn.

Rejections of Claims 42-47 under 35 U.S.C. § 103(a)

Regarding the Examiner's rejections of claims 42-47 under 35 U.S.C. § 103(a), Applicant respectfully asserts that the combined references, alone or in combination, fail to disclose or suggest each and every limitation recited in independent claim 42 as amended. For example, the combined references, including the '756 patent, fail to disclose or suggest passages that each have front and rear ends with substantially rectangular cross-sections, wherein "the substantially rectangular cross-section of the front end of each passage has substantially the same dimensions as the substantially rectangular cross-section of the rear end of each passage" as recited in independent claim 42 as amended.

From a plain view of **Fig. 4** of the '756 patent, the cross-section of the front end of the passage in the die **33** lacks substantially the same dimensions as the cross-section of the rear end of the passage in the die **33**. Specifically, the width of the front end of the passage in the die **33** is at least half the width of the rear end of the passage in the die **33**.

For this reason, as well as the reasons discussed above concerning the importance of forming a curved path between the passage in the die **33** and the mandrel **32**, none of the combined references, including the '756 patent, disclose or suggest passages that each have front and rear ends with substantially rectangular cross-sections, wherein "the substantially rectangular cross-section of the front end of each passage has substantially the same dimensions as the substantially rectangular cross-section of the rear end of each passage" as recited in independent claim 42 as amended. Accordingly, Applicant respectfully requests that the rejections to claims 42-47 under 35 U.S.C. § 103(a) be withdrawn.

New Claims

By amendment, Applicant has added new claims 48-51. These new claims do not introduce new matter as they are fully supported by the specification (see page 4, line 18 and page 7, line 5). Additionally, consideration of these new claims should not require an additional search. Applicant respectfully submits that new claims 48-51, which depend from claims 38, 41, 46, and 42, respectively, are patentable in light of the prior art of record.

Conclusion

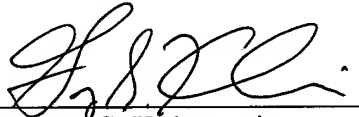
In view of the remarks above and the amendments presented herein, it is believed that claims 35, 37-39, 41-42, 45, 46, and 48-51 are in condition for allowance and notice to such effect is respectfully requested. If the Examiner thinks a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned at the phone number provided below.

The Commissioner is hereby authorized to charge any necessary additional fees, or credit any overpayment, to Deposit Account No. 02-2051, referencing Docket No. FIREP9912142US.

Respectfully submitted,

Dated: September 21, 2005

By:


Gregory S. Kolocouris
Reg. No. 47,714

BENESCH, FRIEDLANDER,
COPLAN & ARONOFF LLP
2300 BP Tower
200 Public Square
Cleveland, OH 44114-2378
(216) 363-4453